Original article

Maternal and perinatal outcome of teenage pregnancy among admitted cases in Ad-din women's medical college hospital - A case control study

Mahbuba Siddiqua[1], Kazi Morjina Begum[2], Ferdousi Chowdhury[3], Md. Abu Sufian[4], Nasiruddin Mahmud[5], AKM Anwarul Azim[6]

Abstract

Objective : To assess the socio demographic background of teenage pregnancy with control, and compare it to that of control group.

Materials & methods : It was a prospective case control study carried out in the Department of Obstetrics and Gynaecology, at Ad-din women's Medical college Hospital, Dhaka, from February 2014 to May 2015. A total of 110 pregnant mothers were studied. Of them 55 were cases (11 yrs to 19 yrs) while 55 patients >19 yrs & <30 yrs of age selected as control. Careful history and thorough clinical examination were performed with the aim of detecting any clinical symptoms and signs suggesting of warning complications of pregnancy and delivery.

Results : In this study teenage pregnancy was found 11.98%. Most of the teenage mothers (67.27%) came from low socioeconomic class. Complications like eclampsia, pre-eclampsia, preterm labour, prolonged labour, obstructed labour, PROM were significantly higher among adolescent group mothers than control group. It was showed that the normal mode of delivery was commoner in teenagers (89.5%) than the control group (72%). In this study perinatal mortality was found 9.09% in teenage group and in control group it was 5.45%.

Conclusion : The outcome of most of the teenage pregnancies was associated with some risks and complications. To reduce the number of such high risks, appropriate care during pregnancy and delivery and improved family planning services and health education can substantially reduce the consequences.

Key word : teenage pregnancy, maternal and perinatal outcome

Introduction

Teenage is the modern description of adolescents[1]. Adolescents as defined by world health organization are the period of life between 10 to 19 years[2]. It is the time of development involving changes in physical, mental, emotional, spiritual and social functioning.

1 Assistant Professor, Department of Obstetrics & Gynaecology, Ad-Din Women Medical College Hospital, Dhaka.

2 Assistant Professor, Department of Obstetrics & Gynaecology, Ad-Din Women Medical College Hospital, Dhaka.

3 Associate Professor, Department of Obstetrics & Gynaecology, Ad-Din Women Medical College Hospital, Dhaka

4 Associate Professor and Principal, Department of Paediatrics, Habigonj Medical College, Habigonj

5 Professor, Department of Paediatrics, Chittagong Medical College Hospital, Chittagong.

6 Professor, Department of Obstetrics & Gynaecology, Ad-Din Women Medical College Hospital, Dhaka

Correspondence : Dr. Mahbuba Siddiqua e-mail: dr.mitaa@gmail.com

Adolescents constitute almost one fifth of the world's total population. In Bangladesh adolescents constitute more than 23% of the total population and out of total female population of 54.5 million almost 14 million are between 10-19 years[3].

Teenage pregnancy and its consequences pose a very severe problem for the individual, the family and the society. In Bangladesh about 69% of the girls get married before crossing their adolescence and of them 34% give birth to children exposing themselves to major health hazards4. Teenage pregnancy is fairly, common in Bangladesh due to early marriage, lower educational status and marrying before 20 years of age[4].

An estimated 70,000 adolescent mothers die each year in the developing countries because of having children before they are physically ready for motherhood[5,6].

Complication from pregnancy and childbirth are the leading cause of death in young women aged 15 to 19 years of age in developing countries6. About 75% of adolescent pregnancies are unplanned in our society[7,8]. The higher death rate among girls compared to that of boys aged 15 to 19 years (1.81 against 1.55 per, 10,000 population) is mainly due to the maternal causes and in true sense it is a gross violation of human rights[9].

Adolescent mothers are unable to take proper care of them and their children[10]. Adolescent pregnancy remains a significant social, economic and health issue[11].

In developed country modernization may contribute to unwanted pregnancy as a result of relaxation of traditional, cultural norms prohibiting premarital sexual activity. In Bangladesh early marriage, ignorance, illiteracy, lack of adequate healthcare facilities, failure to seek family planning advice due to social taboos and shyness are the cause of this problem[12]. Maternal mortality rate for 13 to 19 years group is 5.8/1000 compared to 1.8/1000 for 20 to 25years. Neonatal death rate was 80/1000 for younger group and 43/1000 for older group in Bangladesh[12].

Malnutrition in adolescence can cause poor growth or stunting, which can result in small pelvis that leads to difficult labour with the consequences of chronic morbidity and even mortality for both mother and the child. Pregnancy outcome showed live births, still birth miscarriage, abortion was higher among younger age adolescents[13].

Early marriages result in high proportion of first pregnancies before age of 19 years and consequent higher rate of complications like, anaemia, abortion, prematurity, toxaemia of pregnancy, eclampsia and obstructed labour with subsequent fistula formation and uterine prolapse. To attain the successful safe motherhood adolescent pregnancy needs proper attention and evaluation for the prevention of its devastating effect. This study is designed to identify the maternal and perinatal outcome of teenage pregnancy so that further studies can be made for improving maternal and child health care in Bangladesh.

Materials & methods

It was a prospective case control study carried out in the department of Obstetrics and Gynaecology at Ad-din Women's Medical college Hospital, Dhaka from February 2014 to May 2015. Of them 55 were taken as cases (11 yrs-19 yrs) while 55 patients were taken as control (>19yrs & <30 yrs). Careful history and thorough clinical examination were performed with the aim of detecting any clinical symptoms and signs suggesting of any warning complications of pregnancy and delivery. On the entry into the study, a detailed history including, socio demographic, past obstetric history, record of antenatal check up and any complications noted. On admission into the labour ward a data sheet was filled. Age of the patients was calculated in years.

Quality of life was assessed by questioning patients' status, education, activities at home and employment, number of children and family member. Their knowledge regarding contraceptives and use of contraceptives was assessed. Past obstetric history were taken in detail. Details about the antenatal check up were noted.

Their gestational age were recorded by the date of last menstrual period or by the month since the patient has amenorrhea or by USG report at early weeks of gestation if available. Patients' state of anaemia, oedema, jaundice were assessed clinically. Pulse, B.P. were measured, urine for albumin were tested. Antenatal complications like abortion, molar pregnancy, hyperemesis gravidarum, preterm labour, premature rupture of membrane, precclampsia, ecalmpsia, antepartum haemorrhage, malpresentation were recorded. Data were collected in a pre-design questionnaire and analyzed by SPSS version 16. Chi-square test were done at significant level ($P<0.05$)

Results

This study showed teenage pregnancy was 11.98%. Most (67.27%) of the teenage mothers come from low socioeconomic class. Complications like eclampsia, pre-eclampsia, preterm labour, prolonged labour, obstructed labour, PROM were significantly higher among adolescent group mothers than control group. It was showed that the normal mode of delivery was commoner in teenagers (89.5%) than the control group (72%) probably because of higher number of low birth

weight babies. This study showed that 52.73% teen age mothers had normal vaginal delivery, 34.55% had caesarean section, 1.82% had forceps delivery and 5.45% had ventouse delivery. On the other hand, caesarean section was 38.18%, normal vaginal delivery was 58.18%, ventouse delivery was 3.64% in the control group. Caesarean section was low and vaginal delivery was more in the teenage group. In this study perinatal mortality was found 9.09% in teenage group and in control group it was 5.45%.

Table-I : Age distribution of admitted adolescent pregnant patient and comparing it with nonadolescent pregnant mother

Age group	Case (n=55)		Age group In Years	Control (n=55)	
	No.	%		No.	%
<17 years	7	12.72	20-25	38	69.09
>17-19 years	48	87.27	>25-<30	17	30.90

Table-II : Demographic characteristics of the study subjects

Occupation	Case (n=55)		Control (n=55)	
	No.	%	No.	%
House wife	44	80.00	43	78.18
Day labourer	3	5.45	4	7.27
Housemaid	2	3.64	1	1.82
Work in garments factory	6	10.91	2	3.64
Student	0	0.00	2	3.64
Service in office	0	0.00	3	5.45
Education status				
Illiterate	21	38.18	14	25.45
Can sign only	12	21.82	10	18.18
Primary	17	30.91	13	23.64
Secondary	5	9.09	8	14.55
Higher secondary	0	00	6	10.91
Graduate	0	00	3	5.45
Master degree	0	00	1	1.82
Monthly Income				
<3000 Tk.	37	67.27	29	52.73
3000-5000 Tk.	10	18.18	11	20.00
> 5000 Tk.	8	14.55	15	27.27

Table-III : Complication arise during pregnancy and labour and comparison between two groups

Complications	Case (n=55)		Control (n=55)		P value
	No.	%	No.	%	
Hyperemesis gravidarum	2	3.64	1	1.82	
Pre-eclampsia	7	12.73	1	1.82	
Eclampsia	8	14.55	2	3.64	
IUD	1	1.82	1	1.82	
Preterm labour	6	10.91	3	5.45	
Malpresentation	4	7.27	1	1.82	0.029
PROM	5	9.09	1	1.82	
Prolonged labour	8	14.55	3	5.45	
Obstructed labour	3	5.45	2	3.64	
Oligohydramnias	2	3.64	2	3.64	
Scar tenderness	0	0.00	8	14.55	
APH	0	0.00	1	1.82	
No complication	9	16.36	29	52.73	

Table-IV : Mode of delivery

Mode of delivery	Case (n=55)		Control (n=55)		P value
	No.	%	No.	%	
Normal vaginal delivery	29	52.73	32	58.18	
Assisted breech delivery	3	5.45	0	0.00	
Forceps	1	1.82	0	0.00	0.001
Ventouse	3	5.45	2	3.64	
Caesarean section	19	34.55	21	38.18	

Table V: Indication of caesarean section

Indication of LSCS	Case (n=55)		Control (n=55)		P value
	No.	%	No	%	
Obstructed labour	3	5.45	2	3.64	
Prolonged labour	4	7.27	3	5.45	
Preeclampsia	2	3.64	1	1.82	
Eclampsia	4	7.27	2	3.64	
Previous LSCS	0	0.00	5	9.09	
Malpresntation	1	1.82	1	1.82	
CPD Foetal distress	2 2	3.64 3.64	1 2	1.82 3.64	0.247
Failed trial	1	1.82	1	1.82	
APH	0	0.00	2	3.64	
Oligohydramnios	0	0.00	1	1.82	
Total	19	34.54	21	38.18	

Table-VI : Maternal mortality

Cause of maternal death	Case (n=55)		Control (n=55)	
	No.	%	No.	%
Eclampsia	1	1.81	0	00
Sepsis	1	1.81	0	00

Table-VII : Perinatal outcome

Condition	Case (n=55)		Control (n=55)		P value
	No.	%	No.	%	
Healthy	33	60.00	41	74.55	0.266
Asphyxiated	19	34.55	12	21.82	
Still born	3	5.45	2	3.64	
APGAR Score					
At 1 minute					
>7	30	54.55	39	70.91	0.076
<7	25	45.45	16	29.09	
At 5 minutes					
>7	47	85.45	48	87.27	0.781
<7	8	14.55	7	12.73	
Birth weight (in kg)					
<2.5 kg	36	65.45	23	41.81	0.013
>2.5 kg	19	34.55	32	58.18	

Table VII1: Perinatal mortality

Death	Case (n=55)		Control (n=55)	
	No.	%	No.	%
Antepartum & intrapartum	4	7.27	2	3.64
Neonatal	1	1.82	1	1.82
Total	5	9.09	3	5.45

Discussion

Teenage pregnancy and its consequences pose a very severe problem for the individual, the family and the society.

In a study done by Halida et al[16] have found that marriage in Bangladesh is very common between age 15 to 19 years of age and 69% of the female population marry by this age. According Susan et al.[17], pregnancy of teenage mother is 32%. According to BBS 12.7% of adolescents were already married. In United states, about 11% of all births in 2002 were teenage pregnency (ages 15 to 19)[19]. According to Sundari TK[20], 13% of the pregnant women were adolescent, between of 15 to 19 years. In a study of Zeck W et. al[21]. 51% of adolescents were 17 years old at the time of delivery.

The increase risk of adverse pregnancy outcome associated with low maternal age has largely been attributed to poor socioeconomic conditions among teenagers[22]. Study of Yodev[23] and Yong showed most of the teenage mothers were from a lower socioeconomic background.

The present study found that, most of teenage group were housewives. Cooksey et al[24]. have shown that increase of maternal education leads to first intercourse at a later age and a higher likelihood of using contraceptives at first intercourse.

In this study, in the adolescent group eclampsia, pre-eclampsia, preterm labour, prolonged labour, obstructed labure, PROM are significantly higher among adolescent group than among control group. In a study, Chen KX et al[27]. showed that the rate of very preterm delivery, preterm delivery, very LBW, LBW, SGA, and neonatal mortality were higher in teenage pregnancies. They were consistently increased with decreasing maternal age and were always highest among infants born to mothers aged 15 years or younger. Study of Sarker CS et al[28]. showed that eclampsia and pre-eclampsia affected teenage mothers (10.6%) were much more frequent than mother of 20 years of age and above (5.2%). Incidence of 30% low birth weight baby, 21.1% prematurity and 16.4% perinatal mortality were recorded. Regarding mode of delivery this study findings are consistent with some other studies.

In a study, done by Smith CS et al.[29] showed that among first births, the only significant difference in adverse outcome by age group was for emergency caesarean section, which was less likely among younger mothers. Second births in women aged 15-19 were associated with an increased risk of moderate and extreme prematurity and stillbirth but a reduced. In another study it was showed that the normal mode of delivery was commoner in teenagers (89.5%) in comparison to control group (72%) probably because of higher number of low birth weight baby. There was lower incidence caesarean and instrumental delivery[31]. This study showed that more than fifty percent babies of teenage group were low birth weight.

Du Plessis HM et al.[13] in a study on adolescent pregnancy found, women of young maternal age are approximately 2.5 times more likely to have a low birth weight infant[30]. Only 53.8% of babies of these teenagers have 2.5 kg and above birth weight infant. This means more than 46.2% were low birth weight babies. The overall hospital incidence of low birth weight babies was 30%. Another study done by Mahavarkar et.al.[31] found 51.4% of low

birth weight babies and control group was 35% . In this study perinatal mortality was 9.09% in teenage group and in control group it is 5.45%. Sundari TK et.al.[20] found that perinatal mortality rate 82/1000.

In present study maternal mortality in teenage group is 3.64%. Bangladesh Bureau of Statistics Publication data on 1996 showed that adolescent maternal mortality rate is 3.9 per thousand[18].

Conclusion

This study showed that teenage pregnancy and pregnancy among primigravida group is more commonly complicated by anemia, eclampsia, obstructed labour, prolonged labour, CPD, preterm labour, low birth weight baby. The number of such high risk teenage, unwanted and unplanned pregnancies can easily reduce by improved family planning services. Appropriate care during pregnancy and delivery can substantially reduce newborn morbidity and mortality.

Reference

1. Jeffcoate N. Jeffcoate's of gynaecology. revised by VR Tindall, 5th ed. Butterworth and Co., 1987:5,80-1.
2. Population reports. Youth in 1980. series M. Nov- Dec. 1985.
3. Statistical year book of Bangladesh. Bangladesh Bureau of Statistics. 1989.
4. WHO guidelines on hand hygiene in health care (advanced draft):a summary. World Health Organization 2005.
5. Otterblad OP, Haglund B et al. premature death among teenage mothers. British J Obstet Gynaecol 2004; Aug 111(8):793-9.
6. Mayar S. Pregnancy and childbirth leading cause of death in teenage girls in developing countries. BMJ 2004; 328:1152-a.
7. Cambell S, Less C. Obstetrics by Ten Teachers, 17th edition, p 96.
8. UNICEF: Adolescent girls in Bangladesh, UNICEF Bangladesh country office, October 1999.
9. Bangladesh Bureau of Statistics sample vital registration system 1998.
10. Fatemeh Nairi A. Comparative study on outcome of pregnancy in adolescent and adult women, 25th International Congress of the Medical Women's International Association January 2001.
11. Grady MA, Bloom KC. Pregnancy outcome of adolescent enrolled in a centering pregnancy program. J Midwifery Womens Health Sept-Oct 2004; 49(5): 412-20.
12. Rahman S, Nessa F, Ali R, Ara H. Reproductive health of adolescent in Bangladesh. Int J Gynaecol Obstet 1998; 29:329-335.
13. Akhter HH, Rahrnan MH, Karim F. A study of identify the risk factors affecting nutritional status of adolescent girls in Bangladesh. BIRPERHT. Dhaka. December 1998.ix.
14. Rahman S, Nessa F, Ali R, Ara AH. Reproductive health of adolescents in Bangladesh. Int J Gynaccol Obstet 1989. 29:32935.
15. Census Primary Report 2001.
16. Akhter HM, Karim F, Chowdhuri MEK, Rahman MH. A study to identify the risk factors affecting nutritional status of adolsecent girls in Bangladesh 1998; 1:1.
17. Susan S. Risk factors for aboriginal low birth weight, intrauterine growth retardation and preterm birth in Diruwin Health Region. Australian and New Zealand J of Public Health 1997; 21(5):524.
18. Bangladesh Bureau of statistics 1996, PP.8.
19. The National campaign to prevent teen pregnancy. Teen pregnancy-so what? Updated 2/04, accessed 5/11/04(Internet).
20. Sundari TK. Can health education improve pregnancy outcome? J of Family Welfare 1993; 39(1): 1-12.
21. Zeck W. Impact of adolescent pregnancy on the future life of young mothers in terms of social, familial and educational changes. J of Adolescent Health 2007; 41:380-388.
22. Teenage pregnancy and risk of late foetal death and infant mortality. Br J Obstet and Gynaecol 1999; 106: 116.
23. Yodev BA, Young MK. Neonatal outcome of teenage pregnancy in a military population. Obstetrics and Gynaecology 1997; 90(4): 500-6.
24. Cooksey EC, Rindfuss PR, Guilkey DK. The initiation of adolescent sexual and contraceptive behavior during changing times. J Health Social Behavior 1996; 37: 59-74.
25. Mahavarkar SH, Madhu CK, Mule VD. A comparative study of teenage pregnancy. Journal of Obstetrics and Gynaecology, August 2008; 28(6):604-607
26. Centres for Disease Control and Prevention. Healthy Youth; Health Topics: Sexual behaviours. Updated 4/26/04, Accessed 5/10/04 (Internet).
27. Chen KX, Wen WS, Fleming N, Demissie K, Rhoads GG, Walker M. Teenage pregnancy and adverse birth outcomes: a large population based retrospective cohort study. Int. J of Epidemiology 2007; 36: 368-73.
28. Sarker CS, Giri AK, Sarker B. Outcome of teenage pregnancy and labour. Indian J Medical Association 1991; 89(7):197-9.
29. Smith CS, Pell PJ. Teenage pregnancy and risk of adverse perinatal outcome associated with first and second birth. Population based retrospective cohort study. BMJ 2001; 323:476.
30. Du Plessis HM. Adolescent pregnancy: understanding the impact of age and race on outcomes. J Adolescent Health 1997; 20:187-197.
31. Mahavarkar SH, Madhu CK, Mule VD. A comparative study of teenage pregnancy. Journal of Obstetrics and Gynaecology, August 2008; 28(6):604–607